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ABSTRACT

Information is provided on the impact of the Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) on world population and demographics and the likely effects of AIDS on Zaire. The views of United States and World Health Organization (WHO) officials were obtained on regional differences in the incidence and natural history of AIDS, and on their efforts to improve surveillance and develop models for forecasting the disease's future course. United States foreign assistance to help other countries prevent and control the spread of AIDS is also documented. Appendixes supply statements on: (1) global epidemiology of AIDS; (2) AIDS surveillance and forecasting; (3) WHO's special program on AIDS; (4) United States support for international AIDS prevention; (5) epidemiology of AIDS in Zaire; (6) potential effects of AIDS in Zaire; and (7) United States foreign assistance for AIDS prevention in Zaire. (JD)

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Fact Sheet to the Honorable Jesse Helms, U.S. Senate

October 1987

AIDS

Information on Global Dimensions and Possible Impacts

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United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-229201

October 28, 1987

The Honorable Jesse Helms
United States Senate

Dear Senator Helms:

This fact sheet responds to your request of July 28, 1987, in which you asked us to provide information on (1) the impact of the Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) on world population and demographics and (2) the likely effects of AIDS on Zaire. We briefed your staff on our preliminary results on September 11, 1987, and agreed to conduct limited additional work and to provide you with a fact sheet by late October 1987.

Because scientists lack important information about the natural history of AIDS and the extent of HIV infection, reliable estimates of the number of infected individuals in each country and projected demographic changes that might occur as a result of AIDS are not available. However, as agreed with your staff, we obtained U.S. and World Health Organization (WHO) officials' views on regional differences in the incidence and natural history of AIDS, and obtained information on their efforts to improve surveillance and develop models for forecasting the disease's future course. We also documented U.S. foreign assistance to help other countries prevent and control the spread of AIDS.

GLOBAL EPIDEMIOLOGY

U.S. and WHO officials agree that AIDS is a health problem of significant urgency and broad scope and that it is likely to have profound economic and social impacts. Although the future course of the disease cannot be accurately predicted at present, WHO estimates that between 5 and 10 million people or more are currently infected with HIV and that 50 to 100 million may be infected by 1991. AIDS is considered to have reached serious proportions in central, eastern, and portions of southern Africa, as well

as North America, Europe, and parts of Latin America and the Caribbean. (See appendix I for a detailed discussion of the global dimensions.)

U.S. and WHO officials stated the future course of AIDS cannot be accurately predicted at present because (1) reported AIDS cases are thought to represent only a fraction of the total actual cases to date, (2) epidemiological research on HIV infection has focused primarily on groups that are not statistically representative of countries' general populations, (3) scientists do not know what percentage of individuals currently infected with HIV will develop AIDS, (4) much is unknown about patterns of sexual behavior that influence HIV transmission rates, and (5) other unknown factors exist, such as how AIDS prevention and control programs will influence human behavior.

SURVEILLANCE AND FORECASTING

U.S. and WHO officials recognize the need for more complete data on AIDS and HIV infection and have taken several steps recently to improve surveillance and evaluate alternative approaches for forecasting the incidence of AIDS. The Bureau of the Census, with funding from the Agency for International Development (hereafter referred to as the Agency), is developing a computer data base on AIDS for developing countries that will include information from medical journals, newspapers, and other sources. WHO also is developing a global data base and issues weekly updates of AIDS cases from more than 120 countries. The Agency and WHO recently provided funding for a National Academy of Sciences' Institute of Medicine conference to evaluate forecasting models and identify a strategy for improving their reliability. WHO also is working with the World Bank to develop a methodology for estimating the potential economic impact of AIDS on developing countries.

AIDS PREVENTION AND CONTROL

According to Department of State and Agency officials, the Administration considers WHO to be the organization most qualified to lead and coordinate international AIDS control and prevention efforts. WHO formally established its Special Program on AIDS in February 1987. The program's objectives are to provide technical assistance and financial support for developing and implementing national AIDS prevention and control programs, provide international

leadership, and assure global coordination and cooperation. As of October 21, 1987, 149 countries had established national AIDS committees. WHO had conducted 74 initial country visits in response to 109 requests for collaboration. The remaining 35 visits are scheduled to take place before the end of 1987. Over 50 countries have formulated short-term plans for national AIDS prevention and control programs and 26 countries have developed 3- to 5-year plans.

WHO officials stated that the program's effectiveness will depend largely on whether the United States and other major donors will provide it with adequate resources. In 1987 donors provided the program with $35 million. According to WHO, funding needs are expected to increase rapidly through 1991 when the program may cost an estimated $650 million. WHO's Special Program on AIDS is supported by voluntary contributions that are additional to member countries' assessed contributions for the organization's regular budget.

U.S. funding for international AIDS prevention and control activities to date has been modest. In fiscal year 1986, the Agency provided $1 million to the WHO Special Program on AIDS and $1 million to the WHO Africa Regional Office for AIDS program activities. In fiscal year 1987, the Agency provided a total of $15 million--$5.5 million to the WHO Special Program on AIDS, $3 million for condoms, and $6.5 million for bilateral support of foreign governments' AIDS prevention and control programs.

Also, the National Institute for Allergy and Infectious Diseases and Centers for Disease Control have provided funding for several epidemiological studies on HIV infection and AIDS in other countries. Information on total funding was not readily available, but officials stated that funds spent on AIDS research outside the United States represent a small percentage of these agencies' AIDS research budgets.

U.S. funding levels for international AIDS prevention activities are uncertain for fiscal year 1988 because the Administration did not request funds for this purpose in its budget submission and an appropriations bill that includes $30 million for international AIDS prevention activities is still pending. However, in addition to making a direct contribution to WHO, the Agency plans to provide technical assistance to countries under a project

conceived after the fiscal year 1988 budget submission and initiated in late fiscal year 1987. The project, which is anticipated to cost up to $69 million over the next 5 years, will include public health communications and technical assistance for surveillance, blood screening, and other activities.

AIDS IN ZAIRE

According to State Department and Agency officials, Zaire is among several central and east African countries thought to be severely affected by AIDS. As of September 30, 1987, Zaire had reported only 335 AIDS cases to WHO. However, researchers, including several from the U.S. National Institute of Allergy and Infectious Diseases and Centers for Disease Control, have collaborated with the Zairian government in documenting that HIV infection rates are high, particularly in urban areas and in cities along major transportation routes. State Department and Agency officials believe that AIDS is likely to have significant economic and social impacts on Zaire--including reduced economic output and increased demands on an already overburdened health care system--because large numbers of economically productive, skilled, and well-educated people in urban areas are thought to be infected. (See appendix II for details on AIDS' effects in Zaire.)

Neither the State Department nor the Agency has conducted comprehensive analyses of AIDS' potential economic and political impacts on Zaire because data on HIV infection rates and AIDS cases is imprecise and incomplete. However, the Agency plans to study the disease's short-term economic impacts on Zaire's health care, labor, production, savings, and investment. The Agency also plans to provide continued assistance to the Government of Zaire for AIDS prevention and control. In fiscal year 1987, the Agency provided Zaire $988,000. The Agency mission in Zaire has requested $2.3 million for fiscal year 1988.

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To obtain the requested information, we met with officials at the Department of State, Agency for International Development, U.S. Public Health Service, National Institutes of Health, Centers for Disease Control, and Bureau of the Census between August 11 and October 23, 1987. We also met with the Director of WHO's Special

Program on AIDS and other WHO officials. We obtained documentation from U.S. and WHO officials on the reported extent of AIDS and HIV infection and reviewed scientific articles they recommended. We also reviewed documentation on U.S. foreign assistance programs to improve AIDS surveillance, forecasting, prevention, and control. To obtain information on the likely effects of AIDS on Zaire, we reviewed State Department cables, scientific articles, and documentation on U.S. foreign assistance to Zaire, and discussed potential economic and political effects with State Department and Agency officials.

We discussed the material contained in the appendixes with agency officials and their views have been included where appropriate.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days from its date. At that time, we will send copies of this fact sheet to the Department of State, Agency for International Development, Department of Health and Human Services, appropriate congressional committees, and other interested parties upon request.

Sincerely yours,

Nancy R. Kingsbury
Associate Director

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ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
CDC	Centers for Disease Control
HIV	Human Immunodeficiency Virus
NIAID	National Institute of Allergy and Infectious Diseases
NIH	National Institutes of Health
WHO	World Health Organization

APPENDIX I

OVERVIEW OF EFFORTS TO ASSESS AND RESPOND TO THE GLOBAL AIDS CRISIS

Acquired Immunodeficiency Syndrome (AIDS) is a fatal disease that severely compromises the human body's ability to fight infections and is caused by the Human Immunodeficiency Virus (HIV). HIV infection can be transmitted by sexual intercourse between men and between men and women; by exposure to contaminated blood or blood products; by sharing or reusing contaminated needles; and during pregnancy, childbirth, and possibly breastfeeding, from woman to child. There is no evidence that HIV infection is transmitted through casual contact, water, air, or insects.

Although persons infected with HIV may not show any clinical symptoms of AIDS for months or years, they may never become free of the virus and may infect others without realizing it. An individual is considered to have AIDS if a blood test indicates the presence of antibodies to the AIDS virus and if he or she has one or more debilitating and potentially fatal cancers, neurological disorders, or bacterial, protozoal, or fungal infections that are characteristics of the syndrome. According to the National Academy of Sciences' Institute of Medicine, a vaccine is not expected to be developed for at least 5 years and probably longer. None of the treatments so far cure the disease.

GLOBAL EPIDEMIOLOGY OF AIDS

According to the World Health Organization (WHO), a multilateral organization that directs and coordinates international health work, HIV infection is an international health problem of broad scope and significant urgency. Although the number of cases reported to WHO has grown rapidly over the last 5 years, total reported cases from many countries significantly underestimate the actual extent of AIDS, according to WHO and U.S. officials. As of October 21, 1987, 62,445 AIDS cases had been reported by 126 countries. However, WHO estimates that approximately 100,000 cases have occurred worldwide. The distribution of reported cases by major region is shown in table I.1.

Table I.1: Summary of AIDS Cases Reported to WHO as of October 21, 1987

Region	Number of cases	Number of Countries
Africa	5,830	36
Americas	48,257	41
Asia	205	18
Europe	7,475	27
Oceania	678	4
Total	62,445	126

Source: WHO

According to WHO, reticence in reporting cases, combined with underrecognition of AIDS and underreporting to national health authorities, means that reported cases represent only a fraction of the total cases to date. It is particularly difficult to determine the incidence of AIDS for developing countries in Africa and other regions because many of these countries lack disease surveillance systems. WHO therefore considers the number of countries reporting AIDS cases to be more relevant to an assessment of the geographic scope and extent of AIDS than the number of officially reported cases.

Although information on the disease is incomplete, surveillance and epidemiological studies of HIV in many countries have contributed to a better understanding of HIV prevalence and patterns of transmission. While AIDS has been reported by countries in all major regions, its geographic distribution is uneven. Also, scientists have found that patterns of transmission vary throughout the world. In North America, Europe, and Latin America, AIDS has occurred primarily in homosexual and bisexual men and in intravenous drug users. In Africa, HIV is spread primarily through heterosexual contact and women and men appear to have about equal chances of becoming infected and developing AIDS. Information about AIDS and HIV infection by major region follows below, but must be viewed cautiously due to the underreporting of AIDS cases and incomplete knowledge of HIV infection.

North and South America

In the Americas, WHO statistics indicate that 87 percent of 48,257 cases were reported by the United States, with over 100 cases each reported by Brazil, Canada, Haiti, Mexico, Trinidad and Tobago, the Dominican Republic, and the Bahamas. With the exception of Haiti

and possibly other Caribbean areas where heterosexual transmission occurs frequently, the epidemiological pattern appears to involve primarily homosexual and bisexual men and intravenous drug users. According to the Pan American Health Organizations's AIDS Coordinator, HIV infection is spreading rapidly, particularly in the Caribbean.

Europe

European countries account for 12 percent of AIDS cases reported to WHO as of October 21, 1987. AIDS cases have occurred primarily in homosexual men and drug users, with the largest numbers of cases reported from France, the Federal Republic of Germany, the United Kingdom, and Italy.

Africa

African countries represent about 9 percent of AIDS cases reported to WHO. However, researchers have concluded that Africa--particularly central, eastern, and some southern areas--is more severely affected by AIDS and HIV infection than other regions. Burundi, the Central African Republic, Kenya, Rwanda, Tanzania, Uganda, Zaire, and Zambia are among the countries thought to be most severely affected.

Assessing the scope and extent of HIV infection in Africa is difficult due to limited diagnostic and surveillance capabilities and the lack of a widely accepted clinical case definition for AIDS in Africa. According to the Director of WHO's Special Program on AIDS, epidemiological research suggests that rates are generally highest in urban areas and in cities along major transportation routes. Studies to date have reported that between 4 and 30 percent of individuals sampled in certain areas, primarily cities, are HIV-infected, according to WHO. However, many studies have focused on groups such as hospital workers and blood donors that may not be representative of the general population.

The dominant mode of HIV transmission in Africa is through sexual contact between men and women. According to one article by several prominent researchers[1], risk factors associated with HIV infection among heterosexuals include number of sexual partners, sex with prostitutes, being a prostitute, and being a sexual partner of an infected person. This article also stated that HIV-infection rates

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[1]Thomas C. Quinn, Jonathan M. Mann, James W. Curran, and Peter Piot, "AIDS in Africa: An Epidemiologic Paradigm", Science, Vol. 234, November 21, 1986, p. 958.

among high risk groups, such as female prostitutes, have been reported to range from 27 to 88 percent, depending on factors such as socioeconomic status and location. According to the Agency, researchers have also identified the presence of other sexually transmitted diseases as an important risk factor associated with HIV infection.

Also, because individuals are not screened for HIV infection prior to donating blood in many parts of Africa, transfusions account for a much higher percentage of HIV transmissions than in other parts of the world. According to the previously mentioned study, the percentage of HIV-infected blood donors in Uganda, Rwanda, and Zaire ranged from 8 to 18 percent compared to only .04 percent in blood donors in the United States. Reuse of needles used to provide routine medical treatment for malaria, diarrhea, and other diseases is another vehicle for transmission. Finally, researchers studying HIV infection in Africa have estimated that 25-50 percent of children born to HIV-infected mothers contract the infection during pregnancy or childbirth. This level of transmission from mother to children has also been found in other regions.

Asia

According to WHO, AIDS has only recently started to be reported in Asia. As of October 1987, between 20 and 45 cases had been reported by Japan, Israel, and Turkey, with most other countries reporting fewer cases. The actual extent of HIV infection is unknown, but epidemiological studies suggest that the infection rate is low among general Asian populations. Most cases of AIDS have been traced to imported blood products or sexual transmission among persons, especially prostitutes.

Future course of AIDS is uncertain

For planning purposes, WHO estimates that between 5 and 10 million people or more are currently infected with HIV and that 50 to 100 million may be infected by 1991. However, the future course of AIDS cannot be accurately predicted at present, according to WHO and U.S. public health officials. Officials from WHO, the National Institutes of Health (NIH), and U.S. Public Health Service stated that no country in the world--including the United States--currently has an accurate estimate of the number of HIV-infected individuals.

Although several mathematical models have been developed for projecting the future course of the disease, WHO and U.S. officials stated that the usefulness of these models depends on the quality of baseline data and assumptions used to develop projections. They

agreed that the lack of reliable baseline data on the number of HIV-infected individuals and other uncertainties about the disease have precluded development of reliable projections using these models. Officials stated that the following are among the major reasons for the lack of scientifically accepted estimates.

-- Epidemiological research has focused on groups that are not statistically representative of the general population of countries, cities, or other geographic areas.

-- Scientists do not know what percentage of individuals currently infected with HIV will develop AIDS. WHO estimates that during a 5-year period, 10 to 30 percent of all HIV-infected persons will develop AIDS and 20 to 50 percent will develop AIDS-related illnesses during the same period.

-- Scientists do not know enough about the factors that govern individuals' capacity to become HIV infected and when infected persons are most infectious to others.

-- Scientists do not know the risk of HIV infection associated with a single sexual encounter or the risks associated with various types of sexual activities. Also, much is unknown about patterns of male and female sexual behavior which may differ significantly by country or region.

-- The effect of AIDS prevention and control programs on human behavior is unclear. The life-threatening nature of AIDS may cause significant numbers of people to modify their behavior; however, sexual behavior is based on longstanding cultural traditions and social values and may be extremely difficult to change.

-- The initial tests used to detect HIV infection in much of Africa were inaccurate and yielded a high level of false positive results.

-- Scientists do not know the extent to which a second retrovirus in West Africa, known as HIV-2, causes fatal illness in humans.

According to one NIH official, AIDS projections for 5 or 10 years from now can vary widely, depending on the assumptions made about these and other factors.

AIDS SURVEILLANCE AND FORECASTING

Several U.S. agencies gather and analyze information on the international dimensions of AIDS or conduct epidemiological research on AIDS and HIV infection. These include the Department of State, the Agency for International Development, the Department of Defense, the Bureau of the Census, U.S. Public Health Service, National Institutes of Health, and Centers for Disease Control (CDC). Internationally, WHO is primarily responsible for monitoring and forecasting AIDS cases and helping countries develop and implement AIDS prevention and control programs. U.S. officials stated they collaborate closely with WHO in monitoring the disease and in developing ways to assess its potential impacts.

U.S. funded epidemiological research

NIH's National Institute of Allergy and Infectious Diseases (NIAID) and CDC have provided funding for several epidemiological studies on AIDS and HIV infection outside the United States[2]. Information on total funding for these studies was not readily available, but both agencies' representatives stated that international epidemiological research represents a small percentage of NIAID's and CDC's AIDS budgets.

NIAID has supported studies of AIDS in Haiti, Gambia, Kenya, the Sudan, Trinidad, and Zaire and recently entered into a contract with the Pan American Health Organization to study HIV infection in the Caribbean and Latin America. According to NIAID, these studies provided valuable information on the modes of disease transmission; the possible role of parasitic, viral, and nutritional cofactors; the possible role of genetic factors; and the cultural practices influencing exposure, infection, and disease. NIAID recently initiated a program of International Collaboration in AIDS Research, which is expected to cost about $25 million over a 5-year period. NIAID is in the process of evaluating 15 proposals received from U.S.-based institutions to conduct collaborative research projects in foreign countries and plans to make awards in June 1988.

According to one official, CDC has collaborated with NIAID in conducting AIDS research in Zaire and responds to requests from WHO and other organizations for assistance in conducting

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[2]According to a NIAID official, Department of Defense medical laboratories also have supported a number of studies on AIDS in other countries. However, we did not obtain documentation on these studies.

epidemiological assessments and providing technical assistance. However, CDC has limited resources for international AIDS issues since its primary mission is to monitor and help control disease in the United States.

International surveillance

The U.S. government does not yet have a comprehensive system for monitoring the extent of AIDS and HIV infection in other countries. However, the Agency is working with the Bureau of the Census to develop a data base for developing countries. Also, the United States will eventually have access to better data through WHO, which is expanding its global surveillance system.

U.S. embassies and Agency missions provide routine reports to the State Department on the extent of AIDS and its potential impacts. These reports include information from several sources, including local health officials and press reports, and address issues such as the incidence of AIDS and HIV infection, government actions in response to the disease, and potential political and economic impacts. A State Department official cautioned, however, that much of the information in these reports is anecdotal and that the reports do not provide scientifically accurate national estimates of HIV infection.

In fiscal year 1987, the Agency provided the Bureau of the Census with $140,000 to develop a computer data base that will include information from medical journals, newspapers, and other sources on HIV infection and AIDS in developing countries. Bureau of the Census officials stated that they are in the process of making initial data entries and that once these are made, the data base will be updated monthly. Agency funding was for initial system development and operational costs for the first 2 years. Bureau of the Census officials have proposed to expand the data base to include developed countries but have not received funding from another agency to carry out this effort. According to Bureau officials, the Center for International Research receives a small appropriation for studies on Eastern Europe, but relies primarily on reimbursements from other agencies for conducting demographic research.

Through its Special Program on AIDS, WHO established a surveillance, forecasting, and impact assessment unit to promote and coordinate data collection and analysis on AIDS and HIV infection. This unit prepares and distributes weekly updates of reported AIDS cases and is creating a global AIDS data base that will include information on AIDS cases and HIV infection for all member countries. Member countries will be able to use the data

base once the system is established. Information reported by countries on a confidential basis will be included in the data base but coded so that it can only be used by WHO staff.

WHO also has developed a model methodology for conducting statistically valid studies to determine the extent of HIV infection in developing countries. The methodology will be field tested in Uganda in early 1988. Once the methodology is validated, WHO plans to work with other countries in implementing it.

Demographic forecasting

Although uncertainties about the natural history of AIDS and HIV infection have prevented researchers from confidently predicting the disease's spread, scientific knowledge is improving. U.S. and WHO officials said that there is a need to project the likely course of the disease and that they have taken an initial step toward developing a valid model for forecasting AIDS' demographic impacts. On October 15 to 17, 1987, the National Academy of Sciences' Institute of Medicine, in cooperation with the Agency, WHO, and the Bureau of the Census, held a conference to review and evaluate models for projecting AIDS and to identify a strategy for improving their reliability. The Agency and WHO provided funding for the conference at a cost of $75,000 and $25,000, respectively.

A report of the conference results is being prepared. According to the Agency's AIDS coordinator, conference participants reached agreement on two points regarding the likely demographic impact of AIDS in Africa. First, in heavily affected countries in central and south Africa, AIDS is likely to substantially increase death rates in young adults and infants, possibly even doubling the infant mortality rate. Second, in spite of these deaths, even worst-case estimates show no net reduction in population size in African countries and in fact show only modest decreases in the rate of population growth. This surprisingly modest impact on overall population size results primarily from the high fertility rate in Africa and the long incubation period between HIV infection and death, which together allow HIV-infected adults to be replaced before dying.

According to the Institute of Medicine and the Director of WHO's Special Program on AIDS, projections of AIDS cases have usually been based on extrapolation from past patterns. This type of projection may be reasonably accurate for 3 to 5 years in the future, but cannot predict further with reliability. Consequently, mathematical models that incorporate assumptions about factors such as the risks of HIV infection associated with various sexual behaviors, numbers of sexual partners, and likelihood of developing

the disease after infection are needed. According to the Institute of Medicine, little has been published on modeling the spread of HIV, although a considerable amount of work is in progress.

The Bureau of the Census' Center for International Research has expressed interest in coordinating the development of a reliable mathematical model for AIDS, and Bureau officials estimate it will take 1 to 2 years to develop the model. In the interim, the Bureau has proposed to several agencies the possibility of developing estimates for about 50 countries based on statistical extrapolation. Bureau officials stated these estimates would be for the immediate future and may not be completely valid due to uncertainties about the actual number of AIDS cases and extent of HIV infection and the use of only a few simple variables. However, this effort would fulfill the need for some preliminary estimates of AIDS' potential near term impacts. As of October 23, 1987, no agency had provided funding for this effort. However, the Agency's AIDS coordinator stated that the Agency plans to fund this effort for developing countries.

Assessing potential economic and societal impacts

U.S. and WHO officials agree that AIDS is likely to have serious economic and societal impacts. The Agency's policy guidance on AIDS, issued in April 1987, states that the cost of dealing with AIDS in many countries will take funds and personnel from other government programs in health, family planning, education, and other priority areas and could severely jeopardize gains made in these areas.

According to officials, the State Department and the Agency have not conducted any comprehensive assessments of AIDS' potential economic, political, and social impacts on countries thought to be most seriously affected because these analyses may be premature given imprecise estimates of the extent of AIDS and HIV infection. The Agency's coordinator for AIDS activities stated that a study on AIDS' economic impact on Zaire is planned and the Agency's new AIDS project includes a full-time economist who will work in this area.

WHO is working with the World Bank to develop a methodology for estimating the impact of AIDS on developing countries' health care costs and economies. Within the next few months, the World Bank plans to visit three countries that will be used to field test a methodology for estimating economic impacts.

WHO'S SPECIAL PROGRAM ON AIDS

WHO formally established its Special Program on AIDS in February 1987. The program's objectives are to provide technical assistance and financial support for developing and implementing national AIDS prevention and control programs, provide international leadership, and assure global coordination and cooperation.

According to WHO, development and implementation of national AIDS prevention and control programs are well underway. National AIDS committees have been established in 149 countries. As of October 16, 1987, WHO had conducted 74 initial country visits in response to 109 requests for collaboration. The remaining 35 visits are scheduled to take place before the end of 1987. Over 50 countries had prepared short-term plans for national AIDS prevention and control programs and 26 countries have completed 3- to 5-year plans. Uganda, Kenya, Tanzania, Rwanda, and Ethiopia are among the countries that have completed 3- to 5-year plans and, in collaboration with WHO, have received pledges from bilateral and multilateral donors for over $19 million to implement these plans. Progress in developing national plans also has been made in Latin America and the Caribbean, according to the Pan American Health Organization, which serves as one of WHO's regional offices.

WHO officials stated that the effectiveness of WHO's Special Program on AIDS depends largely on whether the United States and other major donors provide it with adequate funding. In 1987, member governments provided $35 million, of which the United States provided $5.5 million. WHO estimates that funding needs will increase rapidly through 1991 when the program may cost $650 million. WHO's Special Program on AIDS is supported by voluntary contributions that are additional to member countries' assessed contributions for the organization's regular budget.

In addition to making direct contributions to WHO, bilateral donors will need to provide financial support to implement national AIDS prevention and control activities. According to the program's director, WHO will not seek to provide all of the funds needed to implement national programs. On average, WHO is likely to provide about 20 percent of funds needed by developing countries. These countries--including those in Africa that have both a serious AIDS problem and limited financial resources--will have to provide the remaining funds themselves or seek financial support from donors.

U.S. SUPPORT FOR INTERNATIONAL AIDS PREVENTION

According to State Department and Agency officials, the Administration considers WHO to be the organization most qualified to lead and coordinate international AIDS control and prevention efforts. The Agency's policy is to support WHO's international leadership role by making contributions to WHO's Special Program on AIDS and providing selected bilateral support for activities included in national AIDS prevention and control programs. However, the Agency's policy guidance notes that factors such as limited resources and competing priorities, such as child survival programs, will preclude it from establishing major bilateral AIDS programs.

To date, U.S. funding for international AIDS activities has been modest--both in terms of direct contributions to WHO and bilateral support to developing countries. Agency funding for international AIDS prevention and control programs totaled $2 million in fiscal year 1986 and $15 million in fiscal year 1987. In fiscal year 1986, the Agency provided $1 million to the WHO Special Program on AIDS and $1 million to the WHO Africa Regional Office to develop AIDS prevention and control programs in the Central African Republic, the Congo, Rwanda, and Uganda. In fiscal year 1987, the Agency provided $5.5 million of $35 million pledged by donors to operate the WHO program during its first year. In addition, the Agency spent $3 million for condoms and provided $6.5 million for bilateral support of national AIDS prevention and control programs. For example, the United States provided $500,000 of $6.9 million pledged by donors to enable Uganda to implement a national AIDS prevention and control program.

Future U.S. funding for international AIDS activities is uncertain. The Administration did not specifically request funds for international AIDS prevention in its fiscal year 1988 budget and an appropriations bill that includes $30 million for international AIDS prevention is pending. Although the level of funding is uncertain, the Agency plans to make a direct contribution to WHO and provide technical assistance to countries under a project conceived and initiated after the fiscal year 1988 budget request was submitted. The project, which is anticipated to cost up to $69 million over the next 5 years, includes two major components. The public health communications component will include activities in 15 countries designed to encourage changes in behaviors associated with HIV transmission. The other component will enable the Agency to provide countries with technical assistance in AIDS surveillance, blood screening, and health care financing, and to incorporate AIDS prevention strategies into Agency-funded health, population, and nutrition programs.

AIDS IN ZAIRE

Zaire is one of several central and east African countries thought to be severely affected by AIDS and HIV infection. Although the precise magnitude of HIV infection in Zaire is unknown and many believe it is too early to quantify long-term impacts, U.S. and WHO officials agree that AIDS is likely to adversely affect economic and social development and place an increasing burden on existing health care services.

EPIDEMIOLOGY OF AIDS

Accurate estimates of the number of AIDS cases and the extent of HIV infection among Zaire's general population do not yet exist, according to the Agency and AIDS researchers. The government of Zaire only recently started to report AIDS cases to WHO and, like other nations, has not conducted statistically representative studies of Zaire's general population to determine the extent of HIV infection. However, Zaire is among the first African governments to support a large international AIDS research effort and to initiate education programs for AIDS.

As of September 30, 1987, Zaire had reported 335 AIDS cases to WHO. However, epidemiological studies in Zaire on selected segments of the population have significantly contributed to scientific knowledge and demonstrated that AIDS is a severe health problem, particularly in urban areas. In 1984 the Zairian government established an international AIDS research project in Kinshasa, known as Project "SIDA" (SIDA is the French acronym for AIDS). This project is a collaborative effort involving the Zairian Department of Public Health; the U.S. National Institute of Allergy and Infectious Diseases, Centers for Disease Control, and Armed Forces Institute of Pathology; and the Belgian Institute of Tropical Medicine at Antwerp. Since July 1984, Project SIDA has maintained an AIDS surveillance system and sponsored epidemiological studies on HIV infection and AIDS in Kinshasa.

Based on these studies, researchers concluded that HIV-infection rates are highest in Kinshasa and, to a lesser extent, in other cities along major trade routes. Studies show that AIDS is a serious health problem within certain groups in Kinshasa such as hospital workers, blood donors, and prostitutes. For example, one study at Mama Yemo Hospital in Kinshasa estimated that 6.4 percent of the staff was infected with HIV. Another study of 5,099 individuals in the city estimated that 19.7 percent of men 30 to 39 years of age and 24.1 percent of women 20 to 29 years of age were infected. Based on data collected from July 1984 to February 1985, one study projected that the annual incidence of AIDS in Kinshasa was 550 to 1,000 cases per 1 million people. In July 1987, based

on Project SIDA studies, the Agency estimated that between 4 and 8 percent of the adult population in Kinshasa was infected with HIV.

Project SIDA researchers have also found that HIV infection in Zaire is attributable to three modes of transmission: heterosexual contact accounts for 80 to 85 percent of the cases, blood transfusions and reuse of needles account for 5 to 15 percent, and mother to child transmission accounts for 5 percent or less. The age distribution of HIV-infected individuals is consistent with the predominant modes of HIV transmission. High HIV-infection rates exist in the sexually active adult population, whereas infection in individuals 1 to 14 years old is relatively low.

Because Zairian studies are based on samples that are not representative of the general population, Agency officials caution that these studies' estimates should not be assumed to apply to the entire country and should be treated carefully.

POTENTIAL EFFECTS OF AIDS

In the absence of reliable estimates of HIV infection in the general population and lack of knowledge on the natural progression from HIV infection to AIDS in Zaire, State Department and Agency officials believe it is too early to assess the effects of AIDS accurately. These officials, however, made the following observations abouts its potential impacts in that country.

AIDS could have significant demographic, economic, and political effects in Zaire, although it is unclear how severe these will be. Because AIDS occurs primarily in the urban, sexually active adult population and, to a lesser extent, in infants, it could have important demographic effects by increasing the mortality rate in these groups. However, it is unlikely to reduce the overall population size.

Because the urban, sexually active adult population includes a high percentage of Zaire's most economically productive, skilled, and educated workers, AIDS is likely to affect Zaire's economic output adversely by increasing mortality rates among these groups. AIDS will also require increased expenditures for health care, which will place an additional strain on Zaire's overburdened health care system. According to the Agency, health providers fear that the already inadequate resources for health care will be even further diluted and diverted by a disease for which there is no known cure. They therefore believe that AIDS' effects must be examined in the context of other health problems, such as malaria and diarrhea, that claim numerous lives despite being relatively inexpensive to cure.

According to a State Department official, Zaire has undergone several debt reschedulings during the past few years because its economy has not performed as well as expected. He added that AIDS is likely to have only a minor impact on Zaire's ability to repay its external debt because many other factors influence economic performance and AIDS is not likely to be among the most important factors influencing its level of exports.

State Department officials do not believe the AIDS crisis in Zaire will affect U.S. national security interests. The United States does not have base rights in Zaire, and it is unlikely that AIDS will have any effect on the United States' ability to import strategic minerals such as cobalt.

Neither the State Department nor the Agency has conducted comprehensive assessments of AIDS' potential economic and social impacts on Zaire. The Agency, however, plans to conduct a study that will address AIDS' short-term economic impacts on labor, production, savings, investment, and health care in Zaire. Also, the U.S. embassy and the Agency mission monitor and periodically report information on AIDS to the State Department and Agency headquarters.

U.S. FOREIGN ASSISTANCE FOR AIDS PREVENTION

To assist the Zairian government in its effort to contain the spread of HIV, the Agency plans to provide funds to the Zairian national AIDS prevention and control program developed under WHO's guidance, and to AIDS projects that are already established in Zaire, including Project SIDA. The Agency will provide assistance for transmission prevention, training, and research. In fiscal year 1987, the Agency obligated $988,000 for AIDS-related activities in Zaire. For fiscal year 1988, the Agency mission in Zaire requested $2.3 million.

In addition, NIAID, CDC, and the Armed Forces Institute of Pathology are providing technical and financial support for epidemiological research in Zaire through Project SIDA. For fiscal years 1984-87, these agencies provided $2 million for project costs in Zaire. In fiscal year 1988, they plan to provide $1.4 million.

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